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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Sealing Strips

WE, ST. ALBANS RUBBER COMPANY LIMITED, a British Company, of The Camp, St. Albans, Hertfordshire, do hereby declare the invention, for which we pray that a

patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to sealing strips and particularly to strips for providing a seal between mating surfaces, for example, the doors of motor vehicles and refrigerators.

Frequently for providing seals for such surfaces, sealing strips of complex section and/or of composite materials have to be employed, since the surfaces between which the seal has to be formed are often irregularly aligned. Further strips of different section have to be employed at different parts of the seal, these commonly being joined by moulding processes. The use of strips of different section appreciably adds to the labour and cost of effecting the seal, and in addition is likely to lead to unsatisfactory results since different parts of the seals have different characteristics.

To avoid the need for strips of a different section, it has hitherto been proposed to provide strips of sponge rubber or other expanded elastomer. Such strips which have been extruded and vulcanised by conventional methods, have however proved unsuitable as close dimensional tolerances cannot be upheld and an adequate protective outer skin cannot be provided. Attempts to make such strips by moulding techniques and particularly when the strip is provided with a hollow interior have equally proved unsatisfactory as it has only been possible to make strips in short lengths necessitating numerous joints when forming a seal.

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It is the object of this invention to provide an improved sealing strip which will avoid 45 these difficulties.

According to this invention a method of making a sealing strip having a hollow interior comprises the steps of introducing the material for forming the strip into, and 50 moulding the same in, a split mould, within which a plurality of inwardly directed axially spaced projections are provided to support a core by which the hollow interior of the strip is defined, the projections also 55 being adapted to define apertures in the wall of the strip communicating with its hollow interior.

The provision of the projections to support the core, prevents sagging thereof, 60 which sagging has hitherto accounted for the difficulty in making such strips in long lengths, i.e. should the core sag, the wall of the strip cannot be made of uniform thickness. 65

The material for forming the sealing strip is preferably vulcanised in the mould, the material comprising an elastomeric material of suitable composition for forming, when vulcanised, a sponge structure of open cell 70 construction, and a solid elastomer to form an impermeable skin on the outer surface of the sponge structure.

Preferably also the projections comprise pins provided in the lower half of the 75 mould, which is horizontally arranged, to hold the core in correct alignment.

A sealing strip formed in the above manner has the advantage that the apertures provided between the hollow interior of the 80 strip and the outside enhances the deformation characteristics of the sealing strip by preventing an increase of pressure in the hollow interior which would otherwise occur when the strip is compressed. 85

It is to be understood that while in

accordance with the invention the sealing strip is basically of tubular form it need not necessarily be of circular section.

Examples of sealing strips in accordance with this invention are shown in Figures 1 to 4 of the accompanying drawing which comprise prospective sectional views of sealing strips of four alternative sections.

Referring to the drawings, the wall of each of the sealing strips is composed of sponge rubber or other expanded elastomers of open cell structure, 1, partly or completely surrounded by an impermeable skin 2 of adequate physical characteristics to withstand abrasions and exposure to whatever conditions may be encountered. The skin may be made of a different elastomeric material from the spongy interior part of the wall.

As indicated at the outset, the sealing strips are moulded in a split mould within which a core of appropriate cross-section is disposed to define the hollow interior 3 of the strips. The pins or other projections employed to locate and support the core in its proper position result in the formation of axially spaced apertures 4 in the sealing strips which communicate with the hollow interior thereof.

Preferably the material for forming the sealing strips i.e. an elastomeric material of suitable composition for forming when vulcanised a sponge of open cell construction, is placed in the mould in the form of a strip. To form the required protective skin on the outer surface of the sealing strips, a solid elastomer also in the form of a strip is attached to one or both sides of the sponge forming strip. If desired, a relatively non-extensible filamentary material such as a yarn, filament or wire may be incorporated in the sealing strip, either in or on the boundary of the sponge part of the strip.

WHAT WE CLAIM IS:—

1. A method of making a sealing strip having a hollow interior comprising the steps of introducing the material for forming the strip into, and moulding the same in, a split mould, within which a plurality of inwardly directed axially spaced projections are provided to support a core by which the hollow interior of the strip

is defined, the projections also being adapted to define apertures in the wall of the strip communicating with its hollow interior.

2. A method as claimed in Claim 1 in which the mould is horizontally arranged and the projections comprise pins secured to the lower half of the mould.

3. A method as claimed in Claim 1 or 2 in which the material for forming the sealing strip is vulcanised in the mould, the material comprising an elastomeric material of suitable composition for forming, when vulcanised, a sponge structure of open cell construction, and a solid elastomer to form an impermeable skin on at least part of the outer surface of the sponge structure, over its length.

4. A method as claimed in Claim 3 in which the elastomeric material for forming the sponge structure is introduced into the mould in the form of a strip and the solid elastomer is also introduced in the form of a strip, of sufficient width to cover the required portion of the periphery, attached to one or both sides of the sponge forming-strip.

5. A method as claimed in any one of the preceding claims in which a relatively non-extensible filamentary material is incorporated in, or on the boundary of, the sponge structure of the sealing strip.

6. A method of making a sealing strip having a hollow interior, in a split mould, substantially as herein described.

7. A sealing strip having a hollow interior made by the method claimed in any one of the preceding claims.

8. A sealing strip having a hollow interior and a wall of sponge structure surrounded by an impermeable skin and provided with axially spaced apertures in its wall communicating with its hollow interior.

9. A sealing strip substantially as herein described and as illustrated in Figures 1, 2, 3 or 4 of the accompanying drawing.

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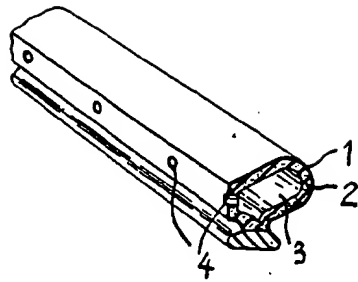


FIG. 1.

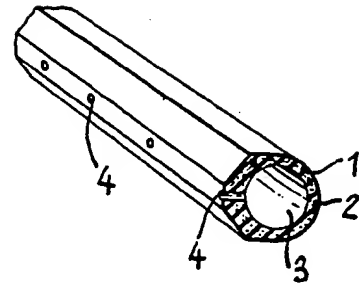


FIG. 2.

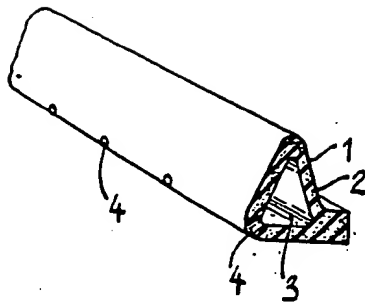


FIG. 3.

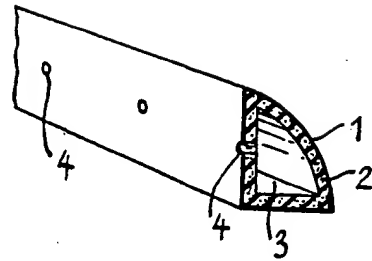


FIG. 4.

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